

Medical University of South Carolina and MUSC Health Board of Trustees President's Report

FY 2020





College of Medicine (COM) Class of 2023:



180 medical students (9 MD/PhD students) from 50 different colleges and universities.



Average MCAT score

511



College GPA

3.76

Of the specialties in which students will be pursuing their training, **Categorical Internal Medicine led the way with the highest number of students at 25** (15.1% of the graduating class).

Other popular specialties included

- **Family Medicine (12.0%)**
- **Pediatrics (10.8%)**
- **Categorical General Surgery (9.0%)**
- **Anesthesiology (6.0%)**
- **Emergency Medicine (5.4%)**
- **Psychiatry (5.4%)**

MUSC COM GRADUATING STUDENTS ENTERING PRIMARY CARE SPECIALTIES

Year	Internal Medicine	Pediatrics	Medicine-Pediatrics	Family Medicine	Obstetrics and Gynecology	Total	% of Graduating Students Remaining in SC for Residency Training (any specialty)
2018	15.1%	9.2%	2.6%	9.9%	3.9%	40.7%	31.0%
2019	12.0%	11.4%	1.8%	8.4%	6.6%	40.6%	33.0%
2020	15.1%	10.8%	1.2%	12.0%	4.8%	44.0%	30.0%

- **A new biomedical engineering program collaboration with C of C** was initiated that will focus on neurology/neurosurgery and neurorehabilitation.
- **The MUSC Storm Eye Institute ranked 12th** among 120 academic ophthalmology departments with residency programs across the U.S. by a recent Ophthalmology Times Magazine survey.
- **The College of Nursing (CON) received a \$1.8 million bequest** from Chuck Chitty, in honor of the Marianne T. Chitty Nursing Scholarship fund to support CON students with financial need.
- **Received CHE approval for the CON new Post-Master's DNP in Lifespan Palliative Care.** This is the first Palliative Care DNP program in the nation.
- **CON awarded \$388,883 in scholarships** to 78 students in 2019.
- **CON Post-MSN Certificate in Psychiatric-Mental Health Lifespan Nurse Practitioner track approved** by CHE.
- **The College of Pharmacy (COP) awarded \$509K in tuition assistance** with 108 individual awards in 2019.
- **COP received an \$8 million gift/pledge** from Alycia Araneo-Craft to name the College of Pharmacy after the Araneo-Craft Family.
- **COP match rate for PGY1 residencies exceeded the national average** for the fourth year in a row. MUSC COP match rate 83%, National match rate 63% in 2020.



- **COP Class of 2019 NAPLEX and MPJE (law exam) first time pass rates exceeded the national average** and was the highest in SC.
- **The James B. Edwards College of Dental Medicine (CDM) received the 2019 GIES Award for Innovation** by an Academic Dental Institution from the American Dental Education Institution.
- **CDM School-Based Oral Health Program became the program office for a Duke Endowment supported school-based oral health program** that serves more than 140,000 underserved children at 79 schools in both North and South Carolina.
- **The College of Graduate Studies (CGS) MSTP (MD/PHD) program was renewed for 5 years** (PI: Nancy Klauber-Demore, M.D.).
- **CGS Incoming Ph.D. class has a record high 6 of 29 URM students.**
- **The College of Health Professions (CHP) Speech Language Pathology program was approved** by CHE.
- **CHP added a Master of Science in Speech Language Pathology program** that will meet the local, state, and national needs for Speech Language Pathologists in the workforce. The program is expected to matriculate the first cohort in Fall 2021.
- **CHP Occupational Therapy Division received a five-year Health Resources and Services Administration (HRSA) grant for \$3.5 million** to provide scholarships for disadvantaged students.
- **CHP Physician Assistant Studies program integrated 32 PA students from Lenoir-Rhyne University (Hickory NC) into the MUSC PA 2022 cohort** after that program voluntarily withdrew from the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) accreditation process.
- **The MUSC Occupational Therapy program was ranked #13 and the Physical Therapy program #20 in the country** by the 2020 U.S. News & World Report.
- **Finance and Administration (F&A) received Commission on Higher Education and JBRC approval** for the College of Pharmacy/Education building and renovation project.
- **F&A reported that MUSC received the National HEED (Higher Education Excellence in Diversity) award**, for the third straight year.
- **Our legislative team (Mark Sweatman, Director of Governmental Affairs) submitted the MUSC state budget request for FY '20 - '21**, which included tuition mitigation and capital requests for central campus renovation as well as flood mitigation.
- **MUSC Office of Humanities initiated Compassion in Action Student Leadership Program with 25 scholars** from all six MUSC colleges.
- **MUSC and Director, David Rivers, M.A., planned and co-sponsored the 12th Annual National Conference on Health Disparities 2019** with more than 350 participants in Oakland, CA.
- **The Black History Intercollegiate Consortium (Charleston Southern University, The Citadel, College of Charleston, MUSC, and Trident Technical College) had its 30th annual Martin Luther King Jr. celebration at MUSC.**
- **The MUSC Leadership Institute launched the inaugural class of the Advanced Leadership Program** this fall. A new Emerging Leaders Program is planned to launch soon.




- COM: **Lee Leddy, M.D.**, was appointed as **COM Chair of the Department of Orthopedics and Physical Medicine** effective September 1, 2019.
- COM: **Hermes Florez, M.D., Ph.D., MPH**: was appointed **Chair of the Department of Public Health Sciences**, effective March 15, 2020. Dr. Florez came from the University of Miami School of Medicine.
- COM: **David Marshall, M.D.** was appointed **Chair of the Department of Radiation Oncology**, following an extensive national search, effective December 2019.
- COM: **Sophie Paczesny, M.D., Ph.D.**, was appointed **Chair of the Department of Microbiology and Immunology** following an extensive national search. She joined MUSC in June 2020.
- COM: **Susan Ackerman, M.D., Professor and Vice Chair Department of Radiology** was elected as **chair** of the American College of Radiology Committee for Women.
- COM: **Dean Ray DuBois, M.D., Ph.D., Dean College of Medicine**, was elected to the **National Academy of Medicine**. This is considered one of the highest honors achievable in the fields of health and medicine.
- COM: **Diann Krywko, M.D., COM, Dept. of Emergency Medicine** was named the American Association of Women Emergency Physicians Outstanding Mentor of the Year.
- COM: **Lawrence Mohr, M.D., COM, Distinguished University Professor Emeritus**, received the **2019 Presidential Citation Award** from the American College of Chest Physicians.
- COM: **Michael de Arellano, Ph.D.**, has been awarded the **2019 Patricia S. Ravenhorst Trailblazer Award** for “exemplary leadership and service to immigrant victims of crime” from the Statewide S.C. Immigrant Victim Coalition and the South Carolina Coalition Against Domestic Violence and Sexual Assault (SCCADVASA).
- COM: **Christine M. Carr, M.D., CPE, FACEP**, was recently appointed by the **American Hospital Association** to the AHA Committee on Clinical Leadership.
- COM: **Bill Moran, M.D.**, received the **2019 South Carolina Chapter of the American College of Physicians Laureate Award** recognizing distinguished service to their chapter and community.
- COM: **Rick Nolte, Ph.D., Professor of Pathology**, has been selected to receive the Pan American Society for Clinical Virology’s Diagnostic Virology Award.
- COM: **Christopher Cowan, Ph.D.**, was appointed **Chair of Neurosciences** following an extensive national search, effective July 1, 2019.



- COM: **Jim Oates, M.D., Professor of Medicine and Chief, Division of Rheumatology, has been selected to receive the Founders Medal** from the Southern Society for Clinical Investigation.
- COM: **Terry Steyer, M.D., Chair Department of Family Medicine, was recently appointed** to the Board of the Association of Departments of Family Medicine.
- COM: **Bruce Thiers, M.D., began a one-year term as President** of the American Academy of Dermatology.
- COM: **Chanita Hughes-Halbert, Ph.D., Professor of Psychiatry and Behavioral Sciences and Associate Dean for Assessment and Evaluation, has been named** by the National Academies of Sciences, Engineering, and Medicine to the National Cancer Policy Forum.
- COM: **Natalie Johnson, Associate Dean for Diversity Affairs, received the MUSC 2020 Earl B. Higgins University Leadership in Diversity Award.**
- COM: **Dean Ray DuBois, M.D., Ph.D., was elected as a Fellow of the Royal College of Physicians** (London).
- CDM: **Walter Renne, D.M.D., received recognition as “the world’s best digital dentist”** from the International Digital Dental Academy.
- CGS: **Dean Paula Traktman, Ph.D., Dean College of Graduate Studies, was elected to the Steering Committee** of the AAMC Graduate Education and Training Group.
- **DaNine Fleming, Ed.D., was inducted** into the 2019 Claflin University Hall of Fame for her community service.
- CHP: **Nancy Carson, Ph.D., and Patty Coker-Bolt, Ph.D., were elected as Distinguished Fellows** of the National Academies of Practice in Occupational Therapy.
- **Wally Renne, D.M.D., was the recipient of the COVID-19 innovation award was for the masks designing and 3D printing face mask designs** to be used as PPE during the COVID-19 pandemic. The facemask became an international success and received an outpouring of support from the local Charleston community. The state museum will feature the mask as part of a COVID-19 display.



- **MUSC 2018-2019 record level of extramural research funding** – \$284 million. This placed us as the top funded research university in the state of South Carolina for the past 4 years. The 2020 numbers will be finalized by October.

 **\$284 million**
of extramural funding

- **CGS received a new 5-year T32 training grant** entitled: “Cellular, Biochemical and Molecular Sciences Training Program: Developing the skills and expertise needed for a changing biomedical landscape”.
- **MUSC, Clemson, and Siemens Healthineers co-hosted a summit** about artificial intelligence (AI) in Columbia to bring together faculty, clinicians, and engineers, where they shared information about current work and new opportunities and discussed the future of AI in health care. Pilot funded three joint AI projects with Clemson.
- **Lowvelo Bike Ride for Cancer Research 2019:** More than **709 cyclists** and **300 volunteers** participated, raising over **\$650,000** to support cancer research and **MUSC-Hollings Cancer Center**, increasing awareness among SC communities.
- The US Patent Office granted **MUSC FRD 18 patents in FY20**.
- **The National Center of Neuromodulation for Rehabilitation (NC NM4R) received a five-year renewal** from the National Institutes of Health (NIH). Additionally, MUSC was named the national coordinating center for rehabilitation research.
- **MUSC launched a new Faculty Innovation Fellowship program** to incentivize innovations in teaching and learning. Five fellows will receive support during FY21.
- **The South Carolina Clinical & Translational Research (SCTR) Institute, one of about 60 Clinical and Translational Award (CTSA) hubs nationwide, has been awarded a \$24M five-year renewal.**
Co-Principal Investigators; Kathleen Brady, M.D., Ph.D., and Patrick Flume, M.D.
<https://web.musc.edu/about/news-center/2020/03/30/sctr-renewal>
- **MUSC became the only institution in the country to house both** a Digestive Disease Research Core Center (DDRCC, Don Rockey, M.D., Director), and a Center for Biomedical Research Excellence in Digestive and Liver Disease (CDLD Stephen A. Duncan, Ph.D., Director).
<https://web.musc.edu/about/news-center/2020/06/05/two-new-centers>
- **MUSC established a COVID-19 Pilot Grant Award Program.** Of the 19 applications received, 7 were awarded following scientific peer review. Awarded projects are listed below.

Application

- Colonizing microbiome as a determinant of COVID-19 outcome: a pilot study
- Drug discovery against SARS-CoV-2 PLPro
- Regulation of SARS-CoV-2 replication by hnRNP E1
- Expanding SARS-CoV-2 epitope reactive T cells for immunotherapy
- Immunogenetics of COVID-19
- Evaluation of splatter and aerosols during dental procedures using a novel aerosol containment device and standard devices

Applicant

Alekseyenko, Alexander
Davies, Christopher
Howe, Philip
Mehrotra, Shikhar
Pandey, Janardan
Renne, Walter

Department/Division

Public Health Sciences
Biochemistry & Molecular Biology
Biochemistry & Molecular Biology
Surgery
Microbiology & Immunology
Oral Rehabilitation



- **The MUSC Shawn Jenkins Children's Hospital and Pearl Tourville Women's Pavilion was opened in February 2020.**
MUSC Office of General Counsel (OGC): Closed HUD insured Financing for SJCHPTWP (Final Endorsement) - \$316,397,200.
- **HUD approved MUHA's application to refinance the bridge loan for the Regional Health Network in August 2019.** OGC: Closed HUD insured Financing for CHS Acquisition (Initial and Final Endorsement) - \$133,585,100.
- **MUSC Health West Ashley Medical Pavilion opened on time in December.** 10,418 patients seen in the first month, with 214 operative procedures.
- **MUSC Health opened the Consolidated Service Center in North Charleston** to provide centralized sterile processing and system-wide supply management capability. OGC: Closed Acquisition of Consolidated Service Center.
- **MUSC Health Regional Health Network went EPIC go live mid-August** and stood up our first regional admit transfer center. According to Epic, this was the fastest implementation ever from start to launch.
- Facilitated by Matt Severance and the Office of System Development and Affiliations (OSDA), **Doctors Care and MUSC Health announced a regional affiliation in September** to improve health care access.
- OSDA: **gained agreement from Lake City and Williamsburg hospital boards to construct a new combined Williamsburg/Lake City Hospital** on donated land in Williamsburg county. OGC: Completed Williamsburg/Lake City Hospital Master Development Agreement, Amendments and Due Diligence for Heath Donation, Member of planning team.
- **MUSC Health team did an outstanding job preparing, managing and recovering from Hurricane Dorian.** Rapid recovery back to normal operations with more than 11,026 patients of 12,560 cancelled (88%) were rescheduled within 4 weeks. 341 of 348 operative procedures (98%) rescheduled within 8 wks.
- **MUSC Health restarting comprehensive adult and pediatric burn program** July 2020 (Steven Kahn, M.D., (Univ. South Alabama, Vanderbilt) Director of the Burn Program and Chief of Burn Surgery).
- **MUSC Health provided a rapid response to request from College of Charleston leadership to assist in their mumps outbreak** – in less than 48 hours, launched a response team and vaccinated students in one of our emergency management tents on the C of C campus.
- **MUSC Health Charleston Division constructed a second Hybrid OR** to support Heart & Vascular growth.
- **OSDA: Hampton Regional Medical Center went live this month** with the MUSC Tele-hospitalist Program.
- **MUSC Health received the Baldrige / Governor's Award** in February 2020.



- **The South Carolina Hospital Association awarded MUSC Health with The Capstone Award** which is given to hospitals and health systems pursuing excellence in delivering highly reliable care, developing a healthy workforce and building healthier communities.
- **HealthGrades named MUSC Medical Center (Charleston) as one of America's 250 Best Hospitals**, which represent the top 5% of hospitals in the United States.
- **#10 National Ranking of Best Children's Hospital for Cardiology in US News and World Report.** Two consecutive years with a top 10 ranking.
- **US News and World Report named MUSC the state's best hospital** for the 5th consecutive year.
- **MUSC Department of Family Medicine celebrated its 50th birthday.** Established February 5, 1970, it is the 3rd oldest Family Medicine department in the country.
- MUSC/MUSC Health was a winner of **The John Hartford Tipping Point Award in Palliative Care.**
- **MICU received 4th re-designation Silver Beacon Award** (nursing critical care excellence award).
- A few wins in **refreshed star ratings** on Centers for Medicare/Medicaid Services Compare website:
 - a. Florence hospital improved from 2 to 3 stars
 - b. Chester nursing center improved from 1 to 2 stars
 - c. Lancaster nursing center is 5 stars
 - d. Marion nursing center is 4 stars
 - e. MUSC Health at Home is 4 stars
- **MUSC telehealth has extended into the post-acute space** - the first of its type in this setting. Telehealth specialty consult visits and a nurse to nurse handoff protocol for stroke patients have been started at several of our affiliated skilled nursing facilities.
- **OSDA: MUSC Health entered an agreement to provide vascular surgical services** at Beaufort Memorial Hospital.
- **Lisa Goodlett was named as one of the top 100 Academic Medical Center CFOs** by Becker's Hospital Review.
- **MUSC Office of External Affairs (OEA) hosted a Value Based Care symposium in Washington DC** with our industry partners, Siemens Healthineers and Medtronic.
- **OEA: The Healthy Me – Healthy SC (HMHSC) program to increase health access and fight health disparities statewide** was introduced this year. It began expansion early 2020 after successful pilots in Anderson, Barnwell and Williamsburg counties. This new program extends MUSC and Clemson's health sciences collaboration.



- OGC and OEA: **Successfully negotiated affiliation agreements** with Synaptive.



- OEA and OGC: **Greenwood Genetic Center (GGC) established an affiliation and time share agreement with MUSC** to improve patient access to genetic services for South Carolinians (Master Affiliation Agreement signed 10/19, Florence Time Share signed 6/20).
- OGC: **Successfully litigated opposition to MUHA's application** for a Certificate of Need in Berkeley County.
- OEA and OGC: **Successfully completed partnership negotiations and contracts with Clemson** for the following:
 - Athletics Medical Consulting Services
 - COVID-19 Advisory Services
 - Student Health Services
- OGC: **Assisted in transition of Employee Health Services** from MUSC to MUHA.
- OEA and OGC: **Negotiated and operationalized joint venture (Modern Minds) with the Navarro Family Foundation (Beemok) joint venture** to establish an innovative mental health clinic and program to treat anxiety and depression.
- OEA and OGC: **Negotiated letter of intent with College of Charleston** to provide convenient, innovative, high-quality health care and wellness services to College of Charleston students.
- OGC: **Restructured debt for Carolina Surgery Center, LLC (Edgewater)** to all for first distributions of ASC since creation, enabled sale of retired investor unit to active physician investor and provided on-going miscellaneous support under MUHA management agreement.
- OGC: **Created Mainsail Health Partners** including completion of governance documents and Form 1023.
- **In June, MUSC Office of Innovation (OI) hosted the 2nd Annual Innovation Week.** The week drew participation from more than 3000 members of the MUSC family and featured ideas from 90 teams (52% increase over FY19) comprising more than 600 MUSC employees.
- OI: **MUSC/ZIAN received FDA approval for the Guardian Needle™**, a next-generation intraoperative monitoring technology. Also, The MUSC/ZIAN blink reflexometer (Eye Stat), a portable device capable of discerning concussions, received FDA approval.
- OI: **MUSC's Disaster Preparedness team forged a partnership with the Clemson School of Architecture** to create and nationally disseminate a blueprint for setting up COVID-19 drive through test sites.
- **MUSC Health Virtual Clinical administrators partnered with MUSC's Analytics team and the Biomedical Informatics Center** to successfully build and deploy an artificial intelligence model to enhance COVID-19 risk assessment screenings of patients. The team published a case report on their work in July.
- OI: **3 MUSC startups were accepted into a regional accelerator program**, the Xlerator Network, and an additional 2 MUSC startups obtained funding from the NIH's small business innovation research and technology transfer program (SBIR/STTR).



COVID-19 PANDEMIC RESPONSE



- **MUSC rose to the COVID-19 challenge across our mission of education, research and patient care:**

Recovery: Reopened all clinical services and imaging in West Ashley, Mt. Pleasant and North area.

Recovery: OR/procedures recovered to normal volumes within 6 weeks and are supported by testing/screening to assure patient and care provider safety.

Recovery: Ambulatory MD visits for FY20 reached 93% of pre-COVID-19 baseline by end of the fiscal year with an average of 39% completed virtually. Pre-COVID, only 1% of ambulatory visits were virtual. COVID-19 mandated numerous clinical services to offer telehealth capacity for the first time. In the first month of FY21, ambulatory activity is at 100% of pre-COVID-19 baseline.

Supply Chain: No major disruptions to operations and ensured safety of all care team members 100% of the time.

Hospital Capacity: Well-managed by interdisciplinary team charged with innovative solutions to care simultaneously for COVID-19 and non-COVID-19 patients. Use of space in new and old children's hospitals to cohort COVID-19 patients.

Established relationships to provide nurses to hotspot hospitals, including Emory Healthcare and Shepherd's Rehabilitation Center in Atlanta.

Finalized Scarce Resource Allocation Policy.

Successfully recovered escrow funds for purchase of surgical masks.

Legal and supply chain leadership for purchase and shipment of PPE from China through Boeing and other providers.

Developed the "Back2Business" program with agreements for employers seeking diagnostic testing, antibody testing, and business re-entry consulting services for return to business during COVID-19 public health emergency. An extension of this program offering is underway with Charleston County School District.

Back2Business

OGC worked closely with various departments to resolve contract cancellations due to COVID-19 (Worked to recoup deposits, negotiate new Force Majeure language in contracts for upcoming events).

MUSC in active partnership for COVID-19 monitoring and response:

- President Cole was invited, along with 29 other leaders across the state, to participate on the Governor's COVID-19 task force, accelerateSC, and to serve on the Protection component sub-group coordinated by the Department of Health and Environmental Control (DHEC).
- Supporting 15+ hospital systems with diagnostic testing
- Legislative leadership - State and Federal
- Clemson University, U of SC, Other health systems (SCHA, affiliates, Prisma)
- CRDA / One Region
- Local community leadership

COVID-19 PANDEMIC RESPONSE



- **Established COVID-19 testing paradigm:**

Enhanced Doctors' Care relationship for COVID-19 testing:

- Drive-Thru Testing site - Florence
- Pre-procedural testing of MUHA patients
- Rural Community Testing Sites statewide

Established relationships with affiliates for pre-procedural testing of MUHA patients, COVID-19 testing of affiliate inpatients.

Thanks to the direction from our MUSC Government Affairs Office, MUSC received \$25M from the General Assembly to partner with DHEC and SCHA to develop and deploy a statewide testing plan. Focus is on rural and underserved areas of the state. More than 199 testing events/sites have been implemented.

MUSC Health is supporting the reopening plan and testing strategy for U of SC, C of C, Citadel, Clemson University.



First in nation

to combine drive-through testing with virtual screening platform

- **Virtual graduation celebrations were successfully implemented for our students**, to include the annual Pearls Lecture, Awards Convocation, and Oath Ceremony, as well as a drive-thru diploma pickup event on Graduation Day.
- **MUSC transitioned more than 3000 students to on-line education** in response to the COVID-19 pandemic with 24 hours' notice.
- **The MUSC Wellness Center (WC) developed a safe and comprehensive reopening plan and successfully reopened on May 28** following a 73-day closure, and the Director of the WC was selected as a panelist for a national webinar on successful reopening strategies.
- **Telework continues wherever possible** within the University.
- **E-learning for summer programs is on time** for all six colleges.
- **Staged reopening of University research labs** has been completed.
- **COVID-19 research initiatives have been fast-tracked.**
- **Significant support from MUSC research** to enable MUSC Health PCR testing platform and serology test development.
- **OGC, OEA and other teams worked closely with Foundation for Research Development** and Satish Nadig, M.D., D.Phil., Director of Center for Cellular Therapy, to secure the necessary licenses to use and distribute a protein as part of our antibody test. Currently working with other third parties to more widely distribute our antibody test throughout South Carolina and the southeast.
- **Working on possible point-of-care saliva tests with Clemson.**



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